

What is claimed is:

1. A cycloolefin copolymer resin having a Hunter b color value of less than 1.0, which resin comprises:

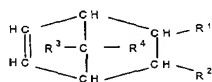
(a) first cycloolefin copolymer having a glass transition temperature of from about 100°C to about 220°C and an intrinsic viscosity of from about 5 to about 1000 ml/g as measured in decalin at 135 °C,

(b) up to about 10% by weight, based on the total weight of the resin, of a second cycloolefin copolymer, said second cycloolefin copolymer having a glass transition temperature of greater than about 50°C and an intrinsic viscosity of from about 1 to about 500 ml/g as measured in decalin at 135 °C, and

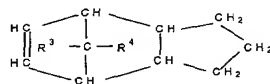
(c) from about 0.01% to about 3%, based on the total weight of the resin, of at least one lubricant selected from the group consisting of fatty acid esters of aliphatic polyhydric alcohols,

with the proviso that the glass temperature of the second cycloolefin copolymer is at least 25°C lower than the glass transition temperature of the first cycloolefin copolymer.

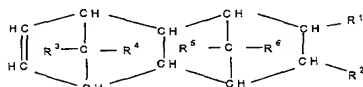
2. A resin as described in claim 1 wherein said first and second cycloolefin copolymers are random copolymers comprising units derived from (a) at least one cycloolefin selected from the group consisting of:



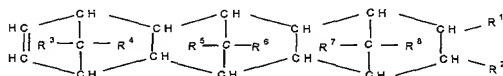
(I)



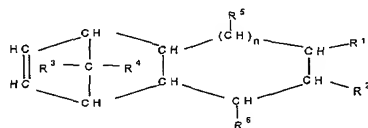
(II)



(III)

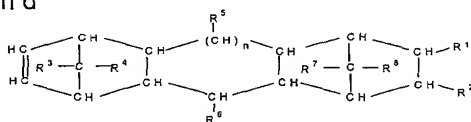


(IV)



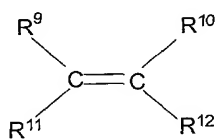
(V)

and



(VI)

wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ , and  $R^8$  are independently selected from hydrogen,  $C_1$  to  $C_{20}$  alkyl groups,  $C_6$  to  $C_{20}$  aryl groups, F, Cl, Br, and I, and  $n$  is an integer having a value from 0 to 5; (b) a non cyclic 1-olefin of the formula:



(VII)

wherein  $R^9$  to  $R^{12}$  are independently selected from hydrogen and  $C_1$  to  $C_8$  alkyl groups; and, optionally, (c) a cycloolefin of the formula:

- 18 -



wherein m is an integer having a value from 2 to 10.

3. A resin as described in claim 2 wherein said second cycloolefin copolymer is present in an amount of from about 0.5 to about 5 weight percent, based on the total weight of the resin and said lubricant is present in an amount of from about 0.05 to about 1.5 percent by weight, based on the total weight of the resin.

4. A resin as described in claim 3 wherein said first cycloolefin copolymer has a Tg of from about 100°C to about 185°C, and said second cycloolefin copolymer has a Tg of from about 55°C to about 70 °C.

5. A resin as described in claim 4 wherein said first and second cycloolefin copolymers comprise units derived from ethylene and a cycloolefin of the formula:



6. A resin as defined in claim 1 having a Hunter b color value of less than 0.8.

7. A resin as defined in claim 1 wherein said lubricant is selected from the group consisting of pentaerythritol tetrastearate, pentaerythritol distearate, and mixtures thereof.

8. A resin as defined in claim 7 wherein said lubricant is pentaerythritol tetrastearate.

9. A cycloolefin resin having a Hunter b color value of less than 0.8, which resin consists essentially of:

(a) a first cycloolefin copolymer having a glass transition temperature of from about 120°C to about 160°C and an intrinsic viscosity of from about 5 to about 1000ml/g as measured in decalin at 135°C,

(b) from about 0.5 to about 10% by weight, based on the total weight of the resin, of a second cycloolefin copolymer, said second cycloolefin copolymer a glass transition temperature of from about 55°C to about 85°C and an intrinsic viscosity of from about 1 to about 500 ml/g as measured in decalin at 135 °C,

(c) from about 0.05 to about 1.5 percent by weight, based on the total weight of the resin, of at least one fatty ester of a polyhydric alcohol, and

(d) and, optionally, up to about 1 percent by weight, based on the total weight of the resin of an antioxidant.

10. A resin as described in claim 9 wherein said second cycloolefin copolymer has a Tg of from about 55°C to about 70°C.

11. A resin as described in claim 10 wherein the molar-mass distribution ( $M_w/M_n$ ) of the first cycloolefin copolymer is less than 2.

12. A resin as described in claim 11 wherein said second cycloolefin copolymer is present in an amount of from about 0.5 to about 5 weight percent, based on the total weight of the resin.

13. A resin as described in claim 10 wherein said first and second cycloolefin copolymers are derived from cycloolefin starting materials that are substantially the same chemically.

14. A resin as described in claim 13 wherein said first and second cycloolefin copolymers are derived from ethylene and norbornene.

5 15. A resin as described in claim 9 which is substantially free of zinc stearate.

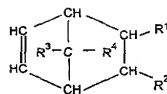
10 16. A resin as described in claim 13 wherein said lubricant is present in an amount of from about 0.1 to about 0.5 percent by weight, based on the total weight of the resin.

17. A resin as described in claim 13 wherein said antioxidant comprises at least one phenolic antioxidant.

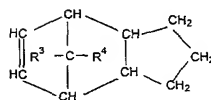
15 18. A resin as described in claim 9 wherein said first and second cycloolefin copolymers are random copolymers comprising units derived from ethylene and at least one cycloolefin selected from the group consisting of:

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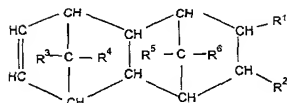
FOOTNOTES



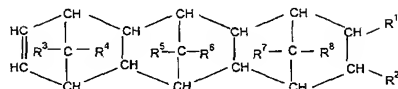
(I)



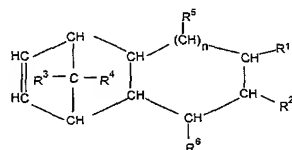
(II)



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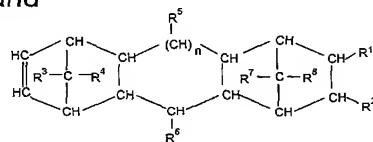


(IV)



(V)

and



(VI)

wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ , and  $R^8$  are independently selected from  
 5 hydrogen,  $C_1$  to  $C_{20}$  alkyl groups,  $C_6$  to  $C_{20}$  aryl groups, F, Cl, Br, and I,  
 and  $n$  is an integer having a value from 0 to 5.

19. A molded article for optical applications that is formed from the resin  
 of claim 1.